IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	)	
	)	
Edward P. Cernocky and	)	
Allen J. Lindfors	)	
	)	
Serial No. 09/896,432	)	Group Art Unit: 3641
	)	
Filed June 29, 2001	)	Examiner: H. A. Blackner
	)	
METHOD AND APPARATUS FOR	)	
DETONATING	)	August 1, 2006
AN EXPLOSIVE CHARGE	)	
	)	

COMMISSIONER FOR PATENTS
Alexandria, VA 22313-1450

SUBSTITUTE APPELLANT'S BRIEF

The following Substitute Appellant's Brief is on appeal of a final rejection of claims of the above-identified U.S. patent application, the final rejection contained in an Office action mailed on October 8, 2003, and a notice of appeal mailed by applicant on January 8, 2004. This Substitute Appellant's Brief is filed in response to an Order to hold the Appeal Brief filed 24 October 2005 as defective. The below amended brief addresses the issues raised by the Order. No charge or fee should be required as a result of filing this Substitute Appellant's Brief, but if a fee is required, please charge to Shell Oil Company Deposit Account No. 19-1800. It is

respectfully requested that the Board consider the following arguments and reverse the final rejection of claims 1-14 in the above-identified application.

(i) Real Party in Interest

The invention of the present application is assigned to Shell Oil Company, which is the real party of interest in the present appeal.

(ii) Related Appeals and Interferences

Appellant previously appealed the rejection of claims 1-14. Subsequently, Examiner reopened prosecution. A copy of the Appeal Brief is included in **(x) Related Proceedings Appendix**.

(iii) Status of Claims

Claims 1-14 stand as finally rejected under 35 U.S.C. §103.

(iv) Status of Amendments

No amendments have been made after the issuance of the Office Action on 10 August 2005.

(v) Summary of Claimed Subject Matter

The present inventions relate to a detonation device for selectively perforating a tubular with a designated explosive charge located downhole in a well bore, said device comprising the tubular, the designated explosive charge attached to the tubular, a wireless receiver, microprocessor and control means connected to said wireless receiver, an explosive bridge wire, high voltage supply means; and energy storage and trigger means, whereby a coded signal received by said wireless receiver is decoded by the micro processor and, if the code designates that the respective explosive charge is to be detonated, sends a signal to the trigger means which will supply high voltage to explosive bridge wire

which will create sufficient energy to initiate detonation of the respective explosive charge and thereby perforating the tubular.

The detonation device allows selective detonation of a plurality of explosive charges individually, in a sequence, or in any desired pattern. The wireless signal does not transmit the power to initiate detonation of the explosive charge thereby reducing the risk of accidental detonation of the explosive charge.

The explosive bridge wire comprises a circuit board having an aperture therein, an electrical circuit formed on said board with a portion of the circuit overlying said aperture forming a bridge, said bridge having dimensions smaller than the rest of the electrical circuit so that, upon application of power to the circuit, the bridge will flash vaporize causing detonation of the nearby explosive charge. The microprocessor includes digital signal processing logic.

The present inventions further relate to a method for selectively perforating a tubular with a designated explosive charge located downhole in a well bore, comprising the steps of_attaching the explosive charge to the tubular, providing a detonating device having a wireless receiver, microprocessor and control means connected to said wireless receiver, at least one explosive bridge wire, high voltage supply means, and energy storage and trigger means; and transmitting a coded signal to said wireless receiver to be decoded by the microprocessor and, if the code designates that the respective explosive charge is to be detonated, sends a signal to the trigger means which supplies high voltage to the explosive bridge wire causing it to substantially instantly vaporize creating sufficient energy to initiate detonation of the respective explosive charge and thereby perforating the tubular. The coded signal allows selective detonation of a plurality of explosive charges individually, in a sequence, or in any desired pattern. The coded signal does not transmit the power to initiate detonation of the explosive charge thereby reducing the risk of accidental detonation of the explosive charge.

(vi) Grounds of Rejection to be Reviewed on Appeal

1. Whether claims 1-5 and 7 are unpatentable over Snider in view of Guerreri.
2. Whether claim 6 is unpatentable over Snider in view of Guerreri and further in view of Neyer.
3. Whether claims 8-12 and 11-14 are unpatentable over Snider in view of Abouav and further in view of Guerreri.
4. Whether claim 13 is unpatentable over Snider in view of Abouav, further in view of Guerreri as applied to claim 8 above, and further in view of Neyer.

(vii) Arguments

1. Rejection of claims 1-5 and 7 as unpatentable under 35 U.S.C. §103 is improper because there is no suggestion to combine the references and the references do not disclose all of the elements in the claims.

Examiner has failed to provide a prima facie basis for rejection because there is no suggestion to combine the references cited. Examiner asserts that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Guerreri's apparatus in order to achieve the benefits of a wireless system as well (i.e. no cost for wires, no management of wires, portability, etc.) as the desired effect of producing a blasting system, which is comprised of a plurality of detonator assemblies that are individually detonated by a wireless remote command source." Examiner further states that Guerreri and Snider are analogous art because they both deal with detonation of explosives. This is not a sufficient suggestion to combine the references.

Snider and Guerreri are in fact nonanalogous art. Analogous art is art that is either in the field of technology of the claimed invention or deals with the same problem solved by the claimed invention. *In re Wood*, 559 F.2d 1032, 202 USPQ 171 (CCPA 1979). Snider relates to "a process or apparatus for establishing

communication through the wall of a wellbore tubular. (see column 1, lines 6-8). Guerreri relates to "detonation of explosive charges using electrical detonators in environments *having high levels of extraneous electricity*. (see column 1, lines 9-13). More specifically, Guerreri relates to the detonation of explosives in hostage-taking situations in urban or highly concentrated areas (see column 1, lines 15-61). A wellbore tubular does not have high levels of extraneous electricity especially in comparison to the highly populated urban area described by Guerreri. Thus, Snider and Guerreri are neither in the same field of technology nor do they solve the same problem. One skilled in the art of establishing communication through the wall of a wellbore tubular would not look to combine elements of Snider with elements of Guerreri, a technology in the field of detonation in environments having high levels of extraneous electricity.

Even if there were a suggestion to combine the references, Examiner also fails to present a prima facie showing of obviousness because not all of the limitations of claim 1 are disclosed. Examiner asserts that Guerreri teaches "an electric blasting cap (104) with an explosive bridge wire and an energy storage and triggering means (110)." Guerreri does not disclose an explosive bridge wire. The firing mechanism in Guerreri is a capacitor discharge-blasting machine. Guerreri explains that "[s]uch devices are well known and comprise a capacitor which stores a quantity of electricity. The capacitor is discharged into the firing circuit upon activation of a firing switch causing an electric blasting cap to detonate the explosive charge." (see column 6, lines 57-63). Upon application of power, the explosive bridge wire of claim 1 will flash vaporize and detonate the explosive charge. (see page 10, lines 19-21). Nowhere does Guerreri teach using a bridge wire for detonation.

2. Rejection of claim 6 as unpatentable under 35 U.S.C. §103 is improper because there is no suggestion to combine the references.

For the reasons presented in section 1 of this Appeal Brief, Snider and Guerreri are not analogous art; therefore, there is no suggestion to combine Snider, Guerri, and Neyer, and a prima facie showing of obviousness is not established. This rejection is therefore improper.

3. Rejection of claims 8-12 and 11-14 as unpatentable under 35 U.S.C. §103 is improper because there is no suggestion to combine the references and the references do not disclose all of the elements in the claims.

For the reasons presented in section 1 of this Appeal Brief, Snider and Guerreri are not analogous art; therefore, there is no suggestion to combine Snider, Guerri, and Abouav, and a prima facie showing of obviousness is not established. This rejection is therefore improper. Even if there were a suggestion to combine the references, Examiner also fails to present a prima facie showing of obviousness because not all of the limitations of claim 8 are disclosed. Agent has amended claim to include the limitation of attaching the explosive charge to the tubular such that the explosive charge is in direct contact with the tubular. This limitation is supported by the specification and is not suggested by the cited references.

4. Rejection of claim 13 as unpatentable under 35 U.S.C. §103 is improper because there is no suggestion to combine the references.

For the reasons presented in section 1 of this Appeal Brief, Snider and Guerreri are not analogous art; therefore, there is no suggestion to combine Snider, Guerri, Abouav, and Neyer, and a prima facie showing of obviousness is not established. This rejection is therefore improper.

For the reasons set forth above, the applicants assert that the rejections made by the Examiner are improper. Applicants therefore request that the Board

reverse the Examiner's rejections, and allowance of the claims is respectfully requested.

Respectfully submitted,

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(viii) Claims Appendix

Claims under Appeal

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1. (Previously presented) A detonation device for selectively perforating a tubular with a designated explosive charge located downhole in a well bore, said device comprising:

the tubular;

the designated explosive charge attached to the tubular;

a wireless receiver;

microprocessor and control means connected to said wireless receiver;

an explosive bridge wire;

high voltage supply means; and energy storage and trigger means, whereby a coded signal received by said wireless receiver is decoded by the micro processor and, if the code designates that the respective explosive charge is to be detonated, sends a signal to the trigger means which will supply high voltage to explosive bridge wire which will create sufficient energy to initiate detonation of the respective explosive charge and thereby perforating the tubular.

2. (Original) The detonation device according to claim 1, wherein said coded signal allows selective detonation of a plurality of explosive charges individually.

3. (Original) The detonation device according to claim 1, wherein said coded signal allows selective detonation of a plurality of explosive charges in sequence.

4. (Original) The detonation device according to claim 1, wherein said coded signal allows selective detonation of a plurality of explosive charges in any desired pattern.

5. (Previously presented) The detonation device according to claim 1 wherein the wireless signal does not transmit the power to initiate detonation of the explosive charge thereby reducing the risk of accidental detonation of the explosive charge.

6. (Previously presented) The detonation device according to claim 1 wherein said explosive bridge wire comprises:

circuit board having an aperture therein;

an electrical circuit formed on said board with a portion of the circuit overlying said aperture forming a bridge, said bridge having dimensions smaller than the rest of the electrical circuit so that, upon application of power to the circuit, the bridge will flash vaporize causing detonation of the nearby explosive charge.

7. (Original) The detonation device according to claim 1 wherein said microprocessor includes digital signal processing logic.

8. (Previously presented) A method for selectively perforating a tubular with a designated explosive charge located downhole in a well bore, comprising the steps of:

attaching the explosive charge to the tubular such that the explosive charge is in direct contact with the tubular;

providing a detonating device having a wireless receiver, microprocessor and control means connected to said wireless receiver, at least one explosive bridge wire, high voltage supply means, and energy storage and trigger means; and

transmitting a coded signal to said wireless receiver to be decoded by the microprocessor and, if the code designates that the respective explosive charge is to be detonated, sends a signal to the trigger means which supplies high

voltage to the explosive bridge wire causing it to substantially instantly vaporize creating sufficient energy to initiate detonation of the respective explosive charge and thereby perforating the tubular.

9. (Original) The method according to claim 8, wherein said coded signal allows selective detonation of a plurality of explosive charges individually.

10. (Original) The method according to claim 8, wherein said coded signal allows selective detonation of a plurality of explosive charges in sequence.

11. (Original) The method according to claim 8, wherein said coded signal allows selective detonation of a plurality of explosive charges in any desired pattern.

12. (Previously presented) The method according to claim 8 wherein the coded signal does not transmit the power to initiate detonation of the explosive charge thereby reducing the risk of accidental detonation of the explosive charge.

13. (Previously presented) The method according to claim 8 wherein said explosive bridge wire comprises:

circuit board having an aperture therein;

an electrical circuit formed on said circuit board with a portion of the electrical circuit overlying said aperture forming a bridge, said bridge having dimensions smaller than the rest of the electrical circuit so that, upon application of power to the electrical circuit, the bridge will flash vaporize causing detonation of the nearby explosive charge.

14. (Previously presented) The method according to claim 8 wherein said microprocessor includes digital signal processing logic.

(ix) Evidence Appendix

Applicant and appellant's legal representative are not aware of any evidence that directly affects or could have a bearing on the Board's decision in the present appeal.

(x) Related Proceedings Appendix

Appellant previously appealed the rejection of claims 1-14. Subsequently, Examiner reopened prosecution. A copy of the Appeal Brief is provided beginning on the following page.